

## CLAIMS

1. Electrolysis installation, intended for the production of aluminium based on igneous electrolysis, comprising a potroom (1), a plurality of electrolytic cells (2) arranged inside the potroom (1) so as to form at least one line with a main axis A, a so-called «service» aisle (15) parallel to the said line of cells and located  
5 inside the potroom (1), and at least one first mobile lifting and handling unit (8), called a «travelling crane», supported on a first runway (14) parallel to the main axis A of the line, and that can be moved above the said line of cells on the said first runway, characterised in that it further comprises at least one second mobile lifting and handling unit (20), called the "lateral portal crane" and a second  
10 runway (21) parallel to the main axis A of the line and independent of the first runway (14), in that the said second unit (20) is supported on the said second runway (21) and can be moved along the said second runway (21), underneath the first unit (8) and along the said line of electrolytic cells (2), such that the two lifting and handling units can be moved independently, and in that the said second  
15 unit (20) can be used to lift and handle liquid metal ladles and / or liquid bath ladles.

2. Electrolysis installation according to claim 1, characterised in that the lateral portal crane (20) is equipped with a trolley (25) capable of being moved along a direction preferably substantially perpendicular to the main axis A of the  
20 line of cells.

3. Electrolysis installation according to claim 2, characterised in that the trolley (25) is equipped with lifting means (26) and gripping means (27).

4. Electrolysis installation according to claim 3, characterised in that the gripping means (27) comprises one or several means (28) of fixing the object  
25 to be lifted and handled.

5. Electrolysis installation according to claim 2 or 3, characterised in that the gripping means (27) is installed on a pivoting support (29) to enable rotation of the element or equipment that it supports about an axis B.

6. Electrolysis installation according to any one of claims 2 to 5, characterised in that the lateral portal crane (20) comprises at least one transverse beam (23, 23a, 23b) that is preferably substantially horizontal and perpendicular to the main axis A and in that the trolley (25) moves on the said beam (23, 23a, 23b).

7. Electrolysis installation according to any one of claims 2 to 6, characterised in that the working range of the trolley (25) is such that its main vertical axis B only overhangs the service aisle, regardless of the position of the said trolley.

8. Electrolysis installation according to any one of claims 1 to 7, characterised in that the electrolytic cells (2) are fully or partly surrounded by working platforms (50).

9. Electrolysis installation according to claim 8, characterised in that the service aisle (15) is located on a first level and the working floors (50) are located at at least one second elevated level at a determined height  $H_b$  above the first level.

10. Electrolysis installation according to claim 9, characterised in that the height  $H_b$  is typically between 0.5 m and 4 m.

11. Electrolysis installation according to claim 9 or 10, characterised in that the first level is preferably located at the level of the ground (3) outside the potroom (1).

12. Electrolysis installation according to any one of claims 8 to 11, characterised in that the working floors (50) comprise a service balcony (51) on the side of the said aisle (15).

13. Electrolysis installation according to claim 12, characterised in that the service balcony (51) is common to all cells (2).

14. Electrolysis installation according to claim 12 or 13, characterised in that the working floors (50) comprise floors (53) between the cells and in that the service balcony (51) is at the same level as the said floors (53) between the cells.

15. Electrolysis installation according to any one of claims 12 to 14, characterised in that the working range L of the trolley (25) is such that the main axis B of the trolley may also overhangs the service balcony (51).

5 16. Electrolysis installation according to any one of claims 1 to 15, characterised in that the second runway (21) comprises a first running means (21a) elevated above the level of the service aisle (15) and a second running means (21b) that is located directly on the service aisle (15).

10 17. Electrolysis installation according to any one of claims 1 to 15, characterised in that the second runway (21) comprises a first running means (21a) elevated above the level of the service aisle (15) and a second running means (21b) that is located on a platform (19) with a determined height  $H_a$  above the said aisle (15).

18. Electrolysis installation according to claim 17, characterised in that the height  $H_a$  is between 0.2 and 2.5 m.

15 19. Electrolysis installation according to any one of claims 12 to 15, characterised in that the second runway (21) comprises a first running means (21a) that is elevated above the level of the service aisle (15) and a second running means (21b) located directly on the service balcony (51) or located on a platform fixed to it.

20 20. Electrolysis installation according to any one of claims 16 to 19, characterised in that the elevated running means (21a) is advantageously fixed to the structure (6) of the potroom (1).

21. Use of an electrolysis installation according to any one of claims 1 to 20, for the production of aluminium.

25 22. Plant for the production of aluminium, characterised in that it comprises at least one electrolysis installation according to any one of claims 1 to 20.